



Report for the File No. 391

The Environmental Health Project Website Assessment

by
Adam Shannon

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U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
BUREAU FOR GLOBAL HEALTH
OFFICE OF HEALTH,
INFECTIOUS DISEASES AND NUTRITION
WASHINGTON, DC 20523-1817



ENVIRONMENTAL HEALTH PROJECT
1611 N. KENT ST., SUITE 300
ARLINGTON, VA 22209
PHONE (703) 247-8730
FAX (703) 243-9004
www.ehproject.org

The Environmental Health Project

Website Assessment

Adam Shannon 12/12/01

Summary

An evaluation of the Environmental Health Project's website offers two primary benefits to the organization. First, EHP can ascertain the current users and effectiveness of the current site, and note any outcomes associated with the information the organization has made available online. Second, the assessment provides EHP with information with which it can plan the future of the site, improving the its design, content, and functions to better serve colleagues around the world.

Recommendations arising from the evaluation range from broad programmatic issues to specific technical updates. Throughout the text of the report, they are grouped into major themes: usage, usability, content, and outcomes. The following summary provides general information on recommendations for improving the site; details and more technical information are found within the specific sections of the report itself.

Findings and Recommendations

Usage

The EHP website sees approximately 1,700 unique visitors each month, about 20% of whom access the site more than once. Survey results suggest that the site receives frequent hits from users in Europe and North America (74% collectively) as well as visits from colleagues in the developing world. A majority of survey participants indicated they viewed the site using a high-speed Internet connection, but a significant number 27% accessed the web through slower dial-up connections.

Site visitors report using the site primarily for research and writing; 82% indicate they visit it a few times a month or less. Ninety percent report that they have used information from the site in some professional capacity.

Site usage statistics suggest, however, that 42% of users leave the site within a minute of arriving at it. Although some of these visitors doubtless came to the site through search engines and simply found it wasn't what they were looking for, retaining more of these lost visitors and encouraging them to browse the site might allow the site to tap into a new resource of interested colleagues.

Staff noted that the organization lacks the ability to track visitors' geographic location. EHP can utilize additional tools such as Nedstat, to gather more information on visitors' location. In addition, the site should continue to assess the prospects for attracting new users to the site, facilitating repeat visits, and broadening the website's appeal.

Mechanisms for doing this form the basis of recommendations in the Usability and Content sections.

Usability

Users rated positively the site's overall navigation, design, and access to information. Nonetheless, several technical changes would dramatically increase the likelihood that all users would be able to access the site and use it efficiently. These include eliminating Java applets, providing a search feature on every page of the site, and increasing accessibility for users with disabilities.

Despite efforts to keep download times down for visitors who access the site through slow Internet connections, download times remained problematic to some users. Survey responses suggest that significant numbers of the site's visitors come from North American and Europe, and use high-speed Internet connections. This suggests a disparity between users with more sophisticated computer systems, and others who are likely to be accessing the site from the developing world with slower systems and connections. EHP can address this discrepancy by providing files in alternate formats, breaking down long documents, and co-locating documents on other servers around the world.

In the intermediate term – in a year or more – the site should consider a more complete graphic overhaul as part of EHP's overall efforts to raise awareness of pivotal issues among a wider range of audiences. The redesign must take into account the needs of users with slow web connections, while providing a platform for EHP to expand the site's appeal and encourage expanded usage from established audiences. The primary purpose of the site redesign will be to enhance the visual appeal and usability of the site, facilitate browsing and use by more first-time visitors, increase repeat use by colleagues, and continue to maintain the site's profile as it provides information and resources to enlarging audiences.

Content

The organization's focus on providing extensive information and resources engendered generally high marks from participants in the assessment. Some discrepancies between the site's intended strengths and visitors' assessments, such as in the case of the lower-rated "What's New" section and Spanish page, can be corrected with relatively minor design updates. Updating the front page to include more news will highlight the site's commitment to becoming a frequently referenced source of information on upcoming events.

As the scope of the organization's efforts continues to grow and expand, the website's design, content, and features should grow as well. Users' interest areas, reflected in their responses to the assessment questionnaire, can provide one important source of guidance.

Staff members should evaluate the current methods of passing information from project staff to website managers, and establish mechanisms to help insure that the site is receiving regular updates based on EHP activities.

Outcomes

The website has allowed EHP to make documents and resources more accessible than was possible through the former centralized library approach. Responses from the survey indicate that the site is frequently used for research and writing. Facilitating more usage by program planners and evaluators, and assembling information on outcomes more actively, will allow the organization to track the effectiveness of the site on an ongoing basis.

Introduction

Website mission and history

The Environmental Health Project website was developed in 1998 to assist the project in its goals of achieving reductions in illness and death among children under five in developing countries from diarrheal disease, malaria, and acute respiratory infections; and reducing the burden of infectious diseases of public health importance. The site's primary roles in the project are to describe the role and activities of EHP, to disseminate information and materials related to these issues to colleagues around the world, and provide an up-to-date listing of recent and upcoming events. Intended audiences include representatives of funding organizations, government representatives, members of international Non-Governmental Organizations, researchers, colleagues in local and national organizations, and members of the private sector.

EHP staff unfailingly point to the site as a vital mechanism for the dissemination of information and resources to the developing world. The resource library was once the central means of distributing publications and responding to requests for technical information. The website has vastly expanded opportunities for colleagues around the world to access and use EHP's resources.

In September 2001, the Environmental Health Project implemented an assessment of the project's website. This process was designed to provide the organization with information on the site's audiences and website usage, determine outcomes and impact related to the site, identify issues and problems, and provide guidance for the growth of the website over the coming years.

In this report, key issues have been grouped into major themes: usage, usability, content, and outcomes. Specific recommendations for each issue appear in the appropriate section; general trends for the future of the site are addressed in the summary.

Site assessment methodology

The assessment utilized feedback from a range of individuals with diverse relationships to EHP and the website:

1. EHP staff members and USAID representatives were interviewed to gather their opinions of the site and suggestions for improvements (See Appendix A: EHP Interviews).
2. A group of individuals from around the world, representing colleagues and others who use the site, filled out an online survey about the site. Emails requesting feedback and referring participants to the URL of the survey form were sent to approximately 45 people who had previously indicated an interest in participating in an assessment; 22 filled out the online form to submit comments. Surveys were submitted confidentially. (See Appendix B: Online Assessment Form, Appendix C: Invited Survey Participants, and Appendix D: Survey Results).
3. Representatives of Crosslink, the site hosting company, provided additional information on technical issues.

In addition, the consultant producing the report provided technical information and suggestions based on common practices in web design, federal guidelines for website usability, and professional experience in nonprofit site development and marketing.

Usage

Site visitors

Although the site assessment form was by no means a scientific sample of the site's range of users, it provides some insight into the variety of characteristics of website visitors. The form suggested a diverse group of users accesses the site, with differing expectations for it that may vary from one session to the next. When asked why they visited the site, most respondents indicated multiple reasons. Common responses included performing research, locating technical information for a program or project, looking for an EHP publication, or seeking general information on environmental health.

Response frequency: Why did you visit the web site? (n=22)

Research	Technical info	Publication	Health info	Browsing	Other
54.5%	59.1%	68.2%	50.0%	27.3%	See Below

Other = possible trade leads, retainer or collaboration with EHP

Respondents found the EHP site through several mechanisms, including search engines, reference from colleagues, links from other sites, and mention in an EHP newsletter. None of the individuals surveyed reported using the site on a daily basis; a small number indicated they viewed it several times each week or once a week. Participants were far more likely to say that they access the website several times a month (50%) or less than

one time a month (31.8%). Despite positive ratings for site content, most users appear to be accessing it with intermittent frequency.

Response frequency: How often do you visit the web site? (n=22)

Daily	Several x month	Several x week	Less 1x month	once a week	1st visit
0	50.0%	4.5%	31.8%	9.1%	8.3%

Survey participants were more likely to be accessing the site from North America (31.6%) or Europe (42.1%) than locations in the developing world. Of the remaining users, 5.2% were in Africa, 10.5% in Asia and the Near East, and 10.5% were in South America. The conditions of the survey, which required participants to access and fill out the online form within approximately one week, may have facilitated higher response rates among organizations in North America and Europe than the rest of the world.

Response frequency: Where are you currently located? (n=22)

Africa	N. America	Asia, NE	South Am	Europe
5.263%	31.579%	10.526%	10.526%	42.105%

Nearly four in five respondents used a high-speed connection (ISDN, DSL, or cable modem) to access the website. Of the other participants who used modems, none were certain of their actual connection speed. This suggests that a technology gap between audiences using sophisticated computer systems to view the site and others operating older equipment with slower web connections.

Respondents reported a variety of professional roles and organizational types (see chart “Survey Participants” at right).

Usage statistics

EHP typically gathers statistics on website usage through Webtrends software installed through its site host, Crosslink. Usage information indicates that the site received nearly 1,700 unique visitors in the month before the assessment, an average of approximately 56 individuals each day. Including repeat visitors, the site was accessed 92 times/day.

The most frequently accessed section of the site, after the home page, was “Publications,” followed by “What’s New,” “This is EHP,” and “Information Services.” The most common downloaded documents were Malaria-related, including several recent Malaria Bulletins.

Survey Participants	
Type of organization:	
Government	4.5%
Local/national CBO/NGO/PVO	4.5%
International NGO	13.6%
Private Sector	22.7%
Bilateral organization	9.1%
Academic	27.3%
Multilateral	13.6%
Job function:	
Program implementation	22.7%
Research	22.7%
Management	22.7%
Consulting	13.6%
Student	0%
Information/Communication	13.6%
Other	8.3%
*Response rates rounded to nearest 0.1%	

Site statistics suggest that repeat usage may be slightly lower than indicated by self-reports; Webtrends noted that slightly less than 20% of the site's visitors accessed the site more than once during the month.

Visitors spent an average of 11 minutes 14 seconds on the site in their visits. Median visit duration was somewhat shorter, at 3 minutes 17 seconds. Two factors may influence this discrepancy. First, a breakdown of the visit durations finds that 42% of visitors leave the site within the first minute after they arrive. Because the site attracts a significant number of visitors through search engines, many first-time users may quickly find that the contents are not relevant to their search. The remaining visitors, arriving through both search engines and referring sites, spend more time on the site. Second, the site contains documents that require some download time, particularly for visitors using a dial-up connection to the web. Although it appears to be short, the average visit duration is not unimpressive given that even the most popular sites on the web see an average 20 minutes usage per month from each visitor.

EHP staff who are responsible for managing the site reported that usage statistics from Webtrends do not include information on the geographic location of visitors. This would be useful for the project to monitor trends in visits to their site and better serve the audience's needs. The current site host, Crosslink, was unable to provide information on whether this information could be made available in the future.

Issues and recommendations

The information available on visitors suggests several key issues for the site's future development:

1. Several EHP staff members mentioned that the site is likely to appeal to a specific and established group of colleagues, but may not in its current form attract many new visitors. Indeed, usage statistics suggest that a significant number of individuals access the front page and yet do not delve further inside. Some may simply find the site isn't what they were looking for, but others may be experiencing a problem viewing the front page due to technical problems with the applets that make front page navigation visible. This concern is addressed in more detail in the Usability section. It is difficult to survey the opinions of those who spend less than a minute at the site and do not return. Nonetheless, some essential changes to the site's front page and navigation may improve the likelihood that more new visitors will return to utilize the site's resources. **Recommendations** to accomplish this task are included in the sections on Usability and Content.
2. Information on the geographic location of visitors would be useful to EHP, but current reports from Webtrends do not include this information. Alternative services such as that provided by Nedstat Pro could supplement the existing usage statistics.

Recommendation: Nedstat (www.nedstat.com) offers "Nedstat Pro," a site usage

monitor that does provide information on users' geographic location. Nedstat Pro does not provide all the same information currently available to EHP through Webtrends, suggesting that it may work best as an add-on with the existing service. Adding a Nedstat counter to the three most frequently accessed pages on the site will cost EHP an additional \$135/year. The technical tasks involve inserting small bits of HTML code into the existing pages; the tracker is invisible to visitors. It is doubtful that this task will pose significant problems for staff members.

3. EHP staff expressed some concern that site statistics software would log IP addresses of users, and questioned whether the site's privacy policy should address this practice. It is nearly universal procedure for servers to log the IP addresses of visitors; site usage software packages like WebTrends and Nedstat merely make this information visible to the user. While IP addresses may allow site managers to see if a specific computer accessed the site, the site usage software does not allow one to track a given visitor's movements or activities on the website.

Recommendation: While it's not necessary to inform users that the server logs IP addresses of visitors, it's perfectly understandable if EHP wishes to do this in the interests of full disclosure. The organization may wish to emphasize that this practice is common and that the IP information is not used in any way.

Usability

Overview

A site with high usability is one in which the design works to facilitate easy, efficient navigation; visual elements enhance the environment without distracting from site content; both text and images are appropriate to the characteristics of the intended audience, and users can perform essential tasks (such as locating particular materials) quickly and with minimum frustration.

Design plays an essential role in usability and the user's overall satisfaction with a site. A powerful design sets up clear and consistent navigation throughout the entire site. It uses images that enhance the meaning and function of the site, without requiring lengthy download times.

The site's structure determines the clarity and ease of its navigation. Finding particular information within a site must be intuitive for the users, meaning that site developers must anticipate the characteristics of their intended audiences and design navigational systems and terms that will be clear and easy for them to use.

Finally, a powerful site must be accessible to a variety of audiences using different technology to access the web. Users running various operating systems and browsers, reaching the web through connections of widely varying speeds, must be able to view the

site quickly and reliably. This includes those visitors who are blind and access the web using screen-reading software. Section 508 of the Rehabilitation Act mandates that all federal agencies' sites and websites provided under contract to a Federal agency must be accessible to people with disabilities; whether or not it can be said to be fully applicable to EHP, it is an important benchmark for good site design.

Usability Assessment

In the online survey, colleagues gave the EHP site generally high marks for usability. Respondents were asked to rate pertinent elements of the site on a scale of 1 to 5 (ranging from "1 – Needs major improvements" to "5 – Excellent"). Average scores were above 4 for clear, readable design and layout; straightforward intuitive navigation; and easy access to information. Lower scores went to the site's download time and up-to-date information. In questions specifically requesting information on issues and problems visitors had encountered with the site, a small but significant percentage reported experiencing slow download times and difficulty connecting to the site.

It deserves note that over 70% of the survey respondents were from North America and Europe, and a similar percentage reported using a high-speed (ISDN, DSL, or cable modem) line to access the web. Lower scores for download times were received from participants in both the developing world and Europe. Given both connection speed and distance that information must travel through the web, individuals in the developing world likely experience longer download times when viewing EHP resources. The EHP site addresses this concern by using a spare style with few images and predominantly text-driven content.

Environmental Health Project staff and related colleagues expressed similar impressions in face-to-face interviews. Most felt the site's limited use of images was appropriate to the needs of colleagues in the developing world, although a few expressed the belief that this makes the site less visually appealing than other comparable sites on related topics.

Average responses: Please rate the following elements of the EHP website (n=22)

Design	Navigation N=20	Easy access to info n = 20	Download time N = 19	Useful Resources n = 20	Up-to-date info N = 21	Overall Quality
4.2	4.1	4.3	3.9	4.0	3.9	4.1

1 - Needs major improvements, 2 - Could be improved somewhat, 3 - Acceptable, 4 - Good, 5 -Excellent
9 - Not relevant for my line of work

Issues and comments

The EHP website receives generally favorable responses on usability indicators. Its text-driven format is less striking than those of several colleague websites, but this may be appropriate to the niche set of users who regularly utilize its resources. If the site wishes to broaden its appeal and develop additional audiences, some cosmetic improvements are recommended. These can largely be accomplished without slowing download times; in many cases, modifications will speed up access to the site.

1. Despite efforts to keep the site accessible to visitors with slow internet connections, users were less satisfied with the website's download times than they were with other factors. Lengthy downloads may be inevitable for a site that offers substantial documents, but EHP may wish to explore alternate means of providing access to the longest resources.

Recommendation: EHP should examine the practicality of offering some documents for download in rich-text format as well as PDF. While PDF allows more attractive formatting and a more accurate rendition of the original document, rich-text will permit faster access by the subset of visitors using slow web connections.

Recommendation: EHP should evaluate the viability of "mirroring" certain content on additional servers located in other parts of the world. These documents could be stored on other servers, with permission of site hosts in other nations, and then linked to directly from EHP's downloads pages. For example, a visitor may be allowed to indicate his/her geographic location in a drop-down menu before downloading a large file. The site would refer the user automatically to the closest of several servers throughout the world where the file is stored. Providing access to a nearer server may help more distant visitors receive files faster.

Recommendation: In addition to PDF documents, some HTML pages can be reduced in size. Lengthy pages, taking up more than 3 full screens, may be divided into several smaller pages, with clear navigation between them. When possible, consider dividing publications into smaller units, such as by chapter or section, before converting to PDF format. Continue to offer full-version documents for visitors with fast connections.

2. The site's "look" is utilitarian, purposefully simple and designed to be easily downloaded by users with slow Internet connections. Nonetheless, the site deserves an update in design befitting EHP's commitment to making it a leading source of information and resources in the fields it serves. Often web designers believe that functionality tends to preclude creating a visually dynamic site with appealing layout and design. Survey respondents were split on whether to enhance the site by including more visuals or more text only. Offering a "text only" version can help alleviate the issue of long downloads, but it requires far more time to manage two parallel sites. It is not impossible, however, to create a more graphically appealing site that does not incur substantially longer download times.

Recommendation: As the site continues to grow, EHP should consider a more significant overhaul to the design. The use of a professional design/development agency is recommended. Suggestions for elements to consider during a redesign process are included in the Conclusions section. The site redesign may be considered as part of the process of broadening the site's audience, ongoing programmatic efforts to promote the concept of environmental health among other disciplines. Significant attention to limiting graphic images, keeping HTML code clean and uncluttered, and avoiding long web pages will permit the site to take on new vibrancy without sacrificing the interests of users from the developing world.

3. Use of Java applets in the site may pose barriers for some users to view links and information, and serves no purpose beyond creating “rollover” effects for front page links. As a result, some visitors using Windows 98 and ME and running Internet Explorer 4.x browsers are unable to view any of the primary links on the front page or the “What’s New” page. The applets also significantly prolong download time. Although they highlight links in the site, they are not essential to the design or navigation, and their role in the site can be fulfilled by other mechanisms. Likewise, the scrolling “marquee” bar on the front page consumes download time when normal text on the page would serve the same purpose.
Recommendation: Eliminate applets and scrolling text from the front page and any other page that use them. When necessary, replace them with simple JavaScript rollovers or other effects that will work on a wide variety of platforms. Consider using only static images that will download faster and be visible to all users.
4. The site’s current navigation, particularly on the front page, is not designed to be accessible for users with disabilities. While EHP may determine that the site is not mandated to be accessible, this remains an important consideration if the project does not wish to exclude some visitors on the basis of their disabilities.
Recommendation: Make essential changes to the site to improve its accessibility, particularly to blind users. Important references for this process include Usability.gov, a federal reference, information from the American Foundation for the Blind (http://www.afb.org/info_document_view.asp?DocumentID=1449), and quick tips from the Web Accessibility Initiative of the World Wide Web Consortium (<http://www.w3.org/WAI/References/QuickTips/>). Essential considerations include: 1) provide “alt” tags in HTML for all images, particularly those that have links attached, 2) avoid using Javascript buttons or other effects as links, and 3) use font sizes and high-contrast colors to increase readability for individuals using screen magnifiers.
5. Although the site allows a keyword-based search for documents, this function is only available on the front page, and can easily be missed by site users.
Recommendation: Incorporate a search box into the header and navigation bar of all pages within the site. This is essentially the same process as was used to create the search feature on the front page, and should be a matter of copying and pasting HTML code. It may be difficult, however, to incorporate the search box into the existing design and headers. EHP may elect to wait until the page design undergoes revisions to build in a search box on each page.

Content

User/staff responses

The EHP site contains a wealth of materials and resources on various topics. Survey participants gave highest ratings to the Information Services and Publications sections,

responses consistent with usage statistics that suggest these are among the site's most frequented areas.

Slightly lower average ratings went to "This is EHP," "EHP Activities," and "What's New" sections. The former two areas contain more static information about the project, and are less likely to contain updated content that would appeal to frequent visitors. The "What's New" section, however, was one that staff indicated they were dedicated to keeping up-to-date as a service to site visitors. The discrepancy between users' and the organization's perceptions of this section's utility suggest that EHP could do more to promote the value and profile of this section. It's worth noting that although these sections received slightly lower ratings than the top-ranked areas, all average scores were still above the midline score of three (see table below).

Less than half of survey participants indicated that the Spanish-language materials on the site are applicable to their work. Among those for whom these resources were usable, the rating was the lowest of any rated section. The page with references to Spanish-language materials is relatively small, and it's likely that participants were responding to the dearth of available resources.

Average responses: *Please rate the following content areas of the EHP website (n=22)*

This is EHP N = 20	What's New N = 20	EHP Activities N = 20	Information Services N = 21	Publications	Links to other sites N=20	Spanish page N = 8
3.900	3.800	3.850	4.286	4.136	4.100	3.750

1 - Not useful at all, 2 - Somewhat useful, 3 - Met my needs, 4 - Useful, 5 - Very useful, exceeding expectations
9 - Not relevant for my line of work

Participants were also asked to indicate a preference for the topic areas on which they would like to see more information in the EHP website (see chart "Areas of Interest" below). As this represents the views of a small group of select site visitors, it cannot be interpreted as the sole authoritative voice on the preferences of the site's audience, but responses may help EHP note which areas of focus deserve additional attention. Final determination of the appropriate content areas to expand depends on the project's interpretation of its mission, and its ability to produce additional materials for the web.

Areas of Interest (n=22) <i>(multiple selections permitted – top 7 selections appear in red)</i>			
Water supply	31.8%	Malaria control	31.8%
Sanitation	50.0%	Malaria surveillance	27.3%
Solid waste disposal	45.5%	Other Infectious disease control	36.4%
Hygiene promotion, education, behavior change	50.0%	Other Infectious disease surveillance	31.8%
Diarrheal disease prevention	40.9%	Vector control	31.8%
Handwashing	18.2%	Air pollution (in- or outdoor)	13.6%
Safe excreta disposal	45.5%	Indicators, monitoring and evaluation	63.6%
Impact of environmental changes on health	45.5%	Health, population & environment links	45.5%
Urban health or environmental health issues	36.3%	Toxic substances	9.1%
Policy related to above topics	40.9%		
*Response rates rounded to nearest 0.1%			

Issues and comments

User responses and staff input suggest that the following issues are the most pivotal in improving the content of the site:

1. A fundamental question guiding the future of the site is whether to retain the tight focus on specific issues traditionally associated with the project or attempt to broaden the site's appeal and address potential new audiences. As the organization's mission evolves, the website should continue to grow and change to better serve the organization in the fulfillment of its goals. This should be apparent in both the site's content and its design. The site's current "look" and the specificity of its content are both functional for its intended audience, but these should be flexible enough to change if the organization elects to broaden the site's appeal.

Recommendation: As noted in the "Usability" section, EHP should consider a design update as part of long-term planning for the site's future. While the content of the site may continue to grow, the design may begin to present the strongest limiting factor in an effort to broaden the site's audience and promote concepts of environmental health in other related disciplines. Several design suggestions are noted in the "Usability" section. A new design may also allow EHP to rearrange its navigation to incorporate any new content or features developed to address emerging new audiences.

2. Most content for the site is the direct adaptation of other project materials; little was designed exclusively for dissemination through the web. EHP staff members mentioned that they occasionally provided the website managers with information for the site, but there was no consistent system or timetable for information to flow from activity-level staff to those who could make it widely available through the site.
Recommendation: EHP staff should review mechanisms by which the website management team accesses information from staff. Site managers and other staff members would likely benefit from a general schedule for staff members to pass along information for the site, as well as more clearly defined parameters for what kind of information and text will help the site grow.
Recommendation: In the long term, EHP staff should consider what new resources would provide even greater benefit to its audiences when offered through the website. In contrast to current static offerings such as publication downloads, these tools could include interactive features such as online databases. Additional suggestions are offered in the Conclusions section.
3. Although several members of EHP staff pointed to the content of the “What’s New” section as a useful resource for international colleagues, survey respondents did not rank this area of the site particularly highly. This suggests that efforts involved in developing and maintaining a timely listing of events and other news for this section are not yet noted or used by many of the site’s visitors. Nonprofit websites often contain a “What’s New” section, and in many cases this section goes unchanged for weeks or even months; as a result, visitors are often cynical about the possibility of finding new content in this area. In addition, the “What’s New” content on the EHP site is distributed to many colleagues through its email list before it appears on the website. Since few visitors report visiting the site more than several times a month, it’s doubtful that they are doing so in anticipation of finding additional news there.
Recommendation: An active “News” section can be an effective way of building a dedicated group of frequent visitors. To raise the profile of this information on the EHP site, the front page should be redesigned to include short text highlighting one or two top news items. These can be short summaries with links to internal pages for the complete articles. Staff should fix a regular schedule for updates, which may occur on a more frequent schedule than alerts sent to the email list. The organization may also consider renaming the “What’s New” section “News.” Finally, news on the website may be more strongly integrated with online newsletters and other resources EHP uses to communicate with colleagues. For example, newsletter articles may point readers to the website for more complete information, bibliographies, and related links.
4. The survey question on what types of materials the respondents would like to see expanded in the website yielded significant information on the topic areas

of interest to the current audience.

Recommendation: Focusing efforts on areas of interest to the audience may help EHP significantly expand usage of the site. The survey may be used as a reference in developing a plan to enlarge content on specific topics. EHP must ultimately decide which of these areas fit its mission and capacity most closely. This decision has broad impact beyond the website, amounting to a determination of future programmatic investments for EHP. It should be undertaken in a long-term planning process, rather than simply within the context of the site itself. The site's ongoing development should continue to reflect the mission, goals, and activities of the organization.

5. The Spanish section, which approximately 36% of respondents indicated was relevant to their work, was the lowest rated area. At the moment this primarily consists of a list of publications in Spanish and links to other organizations. The "EHP Nicaragua" website, which could supplement EHP's capacity, uses a different design and structure from EHP's website.

Recommendation: Although Spanish language materials are clearly of interest to the site's audience, it would likely take considerable organizational investment to fill out this section of the site sufficiently to change visitors' perceptions. Some minor updates would increase the usability of this section, including providing Spanish introductory text on the Spanish publications page. No other revisions are necessary unless the organization decides to prioritize developing additional Spanish resources in the future. The EHP Nicaragua website could serve as the base for additional efforts, but the organization should consider the benefits of integrating the sites more closely, using more common design and navigational elements and allowing searches to extend between the two sites.

Outcomes

Survey and interview results

Half of survey participants indicated that the EHP website was "a useful resource" in their work; all respondents ranked it at least "occasionally relevant." Ninety percent reported that they had used information from the site in their work. The most common usages were researching references and writing journal articles or other documents. Survey participants also commonly indicated that they had used the site as part of program planning and in capacity building activities.

As might be expected, few EHP staff reported using the site with comparable frequency. Most reported that they are already aware of information on the site that is pertinent to their area of expertise, and use the site primarily as an occasional reference tool. Staff and related colleagues indicated that they most often reference upcoming events or locate text that could be used in information for reports, letters to colleagues, and other informational purposes.

Staff clearly indicated that the site has revolutionized the organization's former model for operating a "resource library" to share information and build the capacity of colleagues. The site provides considerable benefit to EHP in its ability to disseminate materials at little cost to the organization. In one recent month, the website facilitated approximately 450 downloads of bulletins and other resources. Responding to an equivalent number of requests for printed publications by organizations around the world would have demanded significant staff time and expense.

Issues and comments

It is difficult in the scope of a website assessment to gauge impact by traditional measures. General changes in the management of the site may improve the organization's ability to track the impact of the site and share this information with others. Of course, improving the ability of the site to fulfill needs of the audience is the overall goal of *all* recommendations in this report.

1. Survey responses suggest that the site is widely used as a reference by individuals performing research and writing articles, as well as to some extent in the development and implementation of programs. Enhancing the site's performance of the latter capacity would be consistent with the project's mission.

Recommendation: To enhance the site's utility in program development, implementation, and evaluation, EHP staff may consider focusing efforts on developing new content related to these processes, and building existing content more visibly into the website. The design of the front page may be updated to focus attention on resources that will be particularly useful in program implementation and evaluation. EHP may also consider making more requests for feedback on outcomes on the site and in the organization's email newsletters. The EHP site could include reports on programs that have successfully used information that was made available through the web, drawing attention to important resources and encouraging others to share lessons learned through the website.

2. Website statistics show many new visitors to the site arrive through search engines, seeking specific terms. These visitors are probably more likely to use the site as a research reference. Seeking additional referring sites, and building repeat traffic among program staff and other colleagues, will encourage the direct use of EHP resources in contexts where outcomes are more apparent and measurable.

Recommendation: In the intermediate term, particularly after any revisions are complete to the site design, EHP staff should carry out an additional round of online marketing for the site. Staff members should place particular emphasis on requesting links from popular "guide" sites, with exclusive collections of links, that are likely to be frequented by key audiences.

Conclusions

Site strengths

Longtime EHP staff members have seen the website completely revitalize the mechanisms by which the project disseminates information. The site has served the project's audiences by increasing the abilities of colleagues to review and use materials and resources. Both the website assessment and anecdotal evidence suggests that the site is seen by many colleagues as a useful and consistent source of information and resources.

Overall user reports on the EHP site were positive; survey participants indicated a high level of satisfaction with both the overall design of the site and its content. Visitors consistently reported that the information available was important and relevant to their work. EHP staff and affiliated colleagues likewise generally believed the site was a worthwhile resource.

Perhaps the most important factor in the site's successes has been its focus; unlike some related sites within the same field, EHP has favored the development of extensive, issue-specific content over flashy design and generalized public education. *All suggestions addressing updates to the site's design and content should be viewed in light of what has worked well for the organization thus far.* While the site and its users will benefit from some modifications, the heart of the site has always been, and should remain, the resources and tools it provides to its audiences.

Future growth

Design

The EHP website enjoys relatively good usage and positive assessment by its colleagues. It fulfills a niche function as a highly technical site with a tight focus on the interests of its audience. This should remain at the heart of the site's function and mission.

It is likely, however, that EHP's work will increasingly involve raising awareness of issues among audiences that are outside its traditional colleague group. Ultimately, the site should reflect that shift. It's unlikely and unadvisable that the site should ever be conceived as a general public education tool, but broadening its scope to attract new audiences will encourage more site traffic and further the project's mission.

Focusing on the needs of audiences in the developing world has led the site to adopt a spare design that uses few images. As web design standards continue to advance, the current design will no longer accurately represent the organization's expertise and capacity to new viewers. As a result, EHP should seriously consider planning a revision of the site's "look" and features over the next two years. An update to the design must

insure that the site remains relatively easy to download using slow connections and older technology. A thoughtful and comprehensive redesign will yield a site that will be attractive and appealing to a broader range of professionals.

Key areas to consider updating in the course of a redesign include:

- 1) All JavaScript buttons and banners should be removed to improve download time and insure that the site displays accurately for all users.
- 2) The front page of the site should incorporate news and other key highlighted links into a dynamic format that staff members can easily update. These will spotlight the site's frequent updates and point visitors to new resources and information the organization wants to promote.
- 3) For areas of the site with extensive subsections (for example, "EHP Activities"), section-specific navigation headers may be inserted under the main page headers. These navigation bars would contain links within a certain area, allow visitors to move freely within that section.
- 4) Some photographs on the site, particularly those in page headers, should be replaced by clearer, more vivid images. The faint EHP logo used as a page background should be dropped to make pages more readable.
- 5) Links in headers and footers should be larger and more visible.
- 6) Page text should be in consistent, highly visible colors (compare "EHP activities" and "Info Services") and readable size for all screen sizes (note small text at the bottom of "Publications"). Likewise, page navigation and headers should be consistent in color ("What's New" differs from the rest of the site).
- 7) Navigation may be revised as needed. For example, "What's New" and "Meeting Alert" could be collected into a single "News" section that would be a one-stop resource on events and new information.

Content

Much of the current strength of the site lies in its function as a clearinghouse for information. In essence, it serves as an online library, supplanting and enhancing the resource center's role within the project. Most content is comprised of materials that are developed as part of the project's operations; little is specialized for the web or designed for online use.

While retaining its traditional function, EHP should examine the potential for the site to expand beyond this passive role and explore the creation of online features designed to enhance communication between colleagues and build capacity through use of the web. The organization's email newsletters already serve an additional function of disseminating information; they may evolve to promote stronger community and exchange of ideas and lessons learned among groups of subscribers. Hosting a searchable online database could provide colleagues with interactive access to data and analysis that will further strengthen their ability to plan and evaluate effective programs. The specific tools implemented will depend largely on staff members' creative approach to new possibilities and the organization's ability to support new development on the site.

Key areas of interest identified by survey participants included:

- 1) Indicators, monitoring and evaluation
- 2) Hygiene promotion, education, behavior change
- 3) Sanitation
- 4) Solid waste disposal
- 5) Safe excreta disposal
- 6) Impact of environmental changes on health
- 7) Health, population & environment links

Possible tools to extend the utility of the website include:

- 1) Online databases that allow users to run searches and manipulate datasets
- 2) Online communities, including email lists (as EHP already operates) that allow users to share information in a moderated forum
- 3) Interactive resources that might allow visitors to take quizzes, browse only areas of interest, and otherwise individualize the information they receive

Management

As the site continues to grow, EHP must establish and formalize new mechanisms for the development of online content. Clearer systems and timetables will help insure the timely flow of information between programmatic staff and those responsible for the site's maintenance. If EHP is to develop new content to render the site more dynamic, this collaboration will become even more critical.

Critical steps to develop a management strategy include:

- 1) Gather input from other programmatic members on what kinds of information they could provide for the site in the future. Information for site updates could be a short section of text from a trip report, a list of upcoming meetings and events held by another organization, requests for input on upcoming resources, new funding opportunities for colleagues, or the release of a major publication. Ask staff members to project the number of times each quarter (or year, if more applicable) they could supply the web team with information. If possible, ascertain when they believe they will likely have text to pass along (for example, a staff member may know s/he will have material after a specific conference). Having staff members' support is clearly of critical importance; their participation benefits the organization and helps raise awareness of their activities.
- 2) Using these time estimates, create a projected schedule for updates for a six-month trial period, incorporating input from all interested staff. Send staff members a tentative schedule and provide a reminder two to three weeks before they are requested to provide an update. As this schedule will likely change, do not yet indicate on the website that updates will be made on a new timetable.
- 3) Evaluate the success of the schedule with staff members after six months. Gather information about the coming six months and revise the update frequency based on the actual update rates during the trial period.

Appendix A: EHP Interviews

During the first week of November 2001, the consultant conducted interviews with members of EHP staff and other colleagues with close ties to the project:

John Austin, AID
Massee Bateman, EHP Project Director
John Borrazzo, AID
Gene Brantley, EHP
Dan Campbell, EHP
Craig Hafner, EHP
Eckhard Kleinau, EHP
Chris McGahey, EHP
Lisa Nichols, EHP
Eddy Perez, EHP
May Post, EHP
Fred Rosensweig, EHP

Interview questions:

Background: What is your position relative to the Environmental Health Project and its website?

Usage: How often do you use the EHP website in a week/month? What are the most common ways you use the site? What information/resources do you typically access there? How long do you generally spend at the site in a normal session?

Usability: How easy is it to find information on the EHP website? Is information presented in the most appropriate formats? How would you describe your level of satisfaction with the design and navigation of EHP website? What do you consider its strong points? What elements of the design and navigation would you improve?

Content: What types of information or materials on the site do you find the most valuable? How do you use this information? How could the site's existing content be improved? What additional content would make the site more valuable?

Outcomes: What results and outcomes have been achieved you that you attribute to the availability of information through the site? Has there been an impact on training, capacity building, program implementation, research, cost reduction, or other program-related areas? Do you know of positive outcomes that have been achieved colleagues in field activities?

Summary: Overall, what are the EHP website's benefits to users? What are its weaknesses? What are the most important issues that should be addressed to improve the site?

Appendix B: Online Assessment Form

To view the online survey in web format, visit:

<http://www.oxygenate.com/ehproject>.

Web-specific formatting prevents the form from being reproduced accurately in this document. The complete text of the online form, without the check boxes and response areas viewable in HTML format, is included below to show questions and response options.

Thank you for taking the time to provide feedback on the Environmental Health Project website. Your responses will help guide the growth and improvement of the site. It will take you approximately five minutes to complete this assessment form, and your answers will be confidential.

If you have not already done so, please visit the website at <http://www.ehproject.org>

How did you find out about the EHP website? (check all that apply)

search engine
link from another site
colleague
EHP e-newsletter
other

How often do you visit the web site?

every day
several times a week
about once a week
several times a month
less than once a month
this is my first visit

Why did you visit the web site? (check all that apply)

Research
Looking for an EHP publication
Browsing
Technical information for program/project
General environmental health information
Other

Please rate the following elements of the EHP website:

- 1 - Needs major improvements
- 2 - Could be improved somewhat
- 3 - Acceptable
- 4 - Good
- 5 - Excellent
- 9 - Not relevant for my line of work

Clear, readable design and layout
Straightforward, intuitive navigation
Easy access to information
Short download time
Useful resources
Up-to-date information
Overall quality of content

Please rate the following content areas of the EHP website:

- 1 -- Not useful at all
- 2 -- Somewhat useful
- 3 -- Met my needs
- 4 - Useful
- 5- Very useful, exceeding expectations
- 9 - Not relevant for my line of work

This is EHP
What's New
EHP activities
Information Services
Publications
Links to other sites
Spanish page

How important is information available on the EHP website in your work?

A must read
A useful resource
Occasionally relevant
Not relevant at all

Where are you currently located?

Africa
Near East/Asia
Europe
North America
South America

What type of access to the internet do you have?

Permanent high-speed connection (above 56,600), e.g., cable modem, DSL, ISDN
Modem dial-up connection with speed of at least 38,400 and above
Modem dial-up connection with speed at least 19,200 but less than 38,400
Modem dial-up connection with speed less than 19,200
Don't know the connection speed

What type of organization do you currently work for?

Government
Local/national CBO/NGO/PVO
International NGO (e.g., CARE, IRC, SAVE)
Private sector
Bilateral organization (e.g., DFID, USAID)
Academic
Multilateral (UNICEF, PAHO, World Bank)
Other

Is your main line of work related to:

Water supply and sanitation
Health

Which best describes your job function?

Program implementation
Research
Mangement
Consulting
Student
Information/Communication
Other

Have you ever used information that was provided through the EHP website in your work?

Yes

No

If yes, describe how you have used the information. Include specific outcomes, if any, you have been able to achieve as a result of the information that is made available through the EHP website:

References for research activity

Program planning or design

Program implementation

Program evaluation

Training/capacity building

Writing of journal articles, guidelines, manuals, or other document

Other (please describe)

How could the information on the website be made more relevant to your work?

Add content more relevant to my line of work

Update more frequently

Add more links

Which of the following topics would you like to see more information on in the EHP site?

(check all that apply):

Water supply

Sanitation

Solid waste disposal

Hygiene promotion, education, behavior change

Diarrheal disease prevention

Handwashing

Safe excreta disposal

Impact of environmental changes on health

Urban health or environmental health issues

Malaria control

Malaria surveillance

Other Infectious disease control

Other Infectious disease surveillance

Vector control

Air pollution (in- or outdoor)

Indicators, monitoring and evaluation

Health, population & environment links
Toxic substances
Policy related to above topics

Please indicate any problems you've experienced with the site:

Inability to connect to EHP site
Links on site not valid or not found
Pages or documents download slowly
Downloads interrupted
Difficult navigation through site
Home page navigation does not display
None
Other (please describe)

What improvements could be made to the site?

Expand contents
Include more photos, maps and charts
More text only, less pictures and graphics
Clearer menu structure to move between pages
Make it easier to find contents

Please offer any additional suggestions to improve the EHP website:

Appendix C: Invited Survey Participants

Forty-five individuals from fifteen countries were contacted to participate in the website survey. Some of these institutional contacts had the potential to facilitate multiple responses, as noted below. Twenty-two people completed the confidential online form.

Country	Number Invited
Bangladesh	2
Brazil	1
Colombia	1
India	3
Indonesia	1
Madagascar	2 EHP Field Staff
Mali	1
Nepal	3 EHP Field Staff
Nicaragua	1 EHP Field Staff
Netherlands	3
South Africa	2
Switzerland	3
Uganda	1
United Kingdom	5
USA	17

1. M. Vanderkolk/Netherlands - m.vanderkolk@mmb.azn.nl
2. Priti Kumar/India - pritikumar@mantraonline.com
3. EHP Staff/Madagascar - echo@pact.mg (Eckhard had 2 contacts but I don't have their names)
4. EHP Staff/Nepal - ehp@wlink.com.np (Lisa Nichols had 2 contacts but I don't have their names)
5. Pandu Wijeyaratne/EHP Nepal - panduwij@ehp.wlink.com.np
6. Vivian Servio/EHP Nicaragua - ehp2@ibw.com.ni
7. Nimal Gunatilleke/ISTI - ngunatilleke@istiinc.com
8. Don Krogstad/Tulane University - krogstad@mailhost.tcs.tulane.edu
9. Victoria Graham/CORE Group - vgraham@worldvision.org
10. Marcia Griffiths/Manoff - mgriffiths@manoffgroup.com
11. M. Elledge/RTI - melledge@rti.org
12. Jonathan Hodgkin/ARD - jhodgkin@ardinc.com
13. Diane Hedgecock/JSI - diane_hedgecock@jsi.com
14. Chris Bates/RTI - cbates@rti.org
15. Ian Curtis/DFID,UK - ian-curtis@dfid.gov.uk
16. Morris Israel/USAID - misrael@usaid.gov
17. Irene Koek/USAID - ikoek@usaid.gov
18. Maryanne Leblanc/WEDC,UK - leblanceng@yahoo.com
19. Emma Fraide/Uganda - emmafraide@hotmail.com
20. Jeff Boyer/USAID - jboyer@usaid.gov

21. Jane Edmondson/LSHTM, UK - jane.edmondson@lshtm.ac.uk
22. Lyda Osorio/LSHTM, UK - lyda.osorio@lshtm.ac.uk
23. Steve Ault/PAHO, Brazil - aultstev@bra.ops-oms.org
24. Darren Saywell/WSSCC, Switzerland - saywelld@who.ch
25. B. Witte/Peace Corps - bwitte@peacecorps.gov
26. Mary Ettling/AID, Africa - mettling@afr-sd.org
27. Robert Bernstein/AID, Indonesia - dok_bob@hotmail.com
28. Ms Shyamalaa/India - shyamala@del2.vsnl.net.in
29. N. Shahid/ICDDRDB, Bangladesh - nshahid@icddrb.org
30. Bilqis Hoque/EPRC, Bangladesh - eprc@bol-online.com
31. Mr Zurbrugg/SANDEC, Switzerland - zurbrugg@eawag.ch
32. Ms. Inrestre/UNIVALLE, Colombia - inrestre@mafalda.univalle.edu.co
33. Dick de Jong/IRC, Netherlands - jong@irc.nl
34. Holly Williams/CDC Atlanta - hbw2@cdc.gov
35. Mr Carel/South Africa - carel@medic.up.ac.za
36. Mr Royccher/India - royccher@satyam.net.in
37. Ms. Alrisseeuw/WASTE, Netherlands - alrisseeuw@waste.nl
38. Tricia Jackson/WEDC, UK - P.A.Jackson@lboro.ac.uk
39. M. Tounkara/PLAN-Mali - mahamadou.tounkara@plan-international.org
40. P. Nicholas/SIDHEAN, USA - nicholas@sidhean.com
41. Mr Shoki/NewAfrica, South Africa - shoki@newafrica.com
42. Renny Seidel/AED, Washington DC - rseidel@aed.org
43. Marcia Rock, World Bank, Washington DC - mrock@worldbank.org
44. Joe Hueb/WHO, Switzerland - huebj@who.ch
45. G. Ghosh/WSSCC, Switzerland - ghoshg@who.ch

Appendix D: Survey Results

How did you find out about the EHP website? (n=22)

Search	Colleague	Link	Newsletter	Other
27.3%	36.4%	27.3%	36.4%	4.5%

Other = Knew from past

How often do you visit the web site? (n=22)

Daily	Several x month	Several x week	Less 1x month	once a week	1st visit
0	50.0%	4.5%	31.8%	9.1%	8.3%

Why did you visit the web site? (n=22)

Research	Technical info	Publication	Health info	Browsing	Other
54.5%	59.1%	68.2%	50.0%	27.3%	See Below

Other = possible trade leads, retainer or collaboration with EHP

Rate elements of the website: (n = 22 except where indicated)

Design	Navigation N=20	Easy access info n = 20	Download N = 19	Resources n = 20	Up-to-date N = 21	Quality
4.227	4.100	4.250	3.895	4.000	3.857	4.136

Rate content of the website: (n=22 except where indicated)

This EHP N = 20	Whats New N = 20	Activities N = 20	Info N = 21	Pubs	Links N = 20	Spanish N = 8
3.900	3.800	3.850	4.286	4.136	4.100	3.750

How important is information available on the EHP website in your work? (n=22)

Must Read	Occasionally useful	Useful resource	Not relevant
22.7%	22.7%	54.5%	0.0%

Where are you currently located? (n=22)

Africa	N. America	Asia, NE	South Am	Europe
5.263%	31.579%	10.526%	10.526%	42.105%

What type of access to the Internet do you have? (n=22)

High speed	Over 38400	19200-38400	Less 19200	Don't know
72.727%	0.000%	0.000%	0.000%	27.273%

What type of organization do you currently work for? (n=22)

Gov	Bilateral	Local NGO	Academy	Int NGO	Multilat	Private	Other
4.545%	9.091%	4.545%	27.273%	13.636%	13.636%	22.727%	4.545%

Is your main line of work related to: (n=22)

Water Supply	Health	Both
50.000%	31.818%	18.182%

Which best describes your job function? (n=22)

Program	Consultant	Research	Student	Managemt	Info/comm	Other
22.727%	13.636%	22.727%	0.000%	22.727%	13.636%	8.333%

Other = programming and technical advisor

Have you ever used information that was provided through the EHP website in your work? (n=22)

Yes	No
90.909%	9.091%

If yes, describe how you have used the information (n = 20)

Reference	Training	Planning	Writing	Implement	Evaluate	Other
70.000%	45.000%	55.000%	75.000%	20.000%	10.000%	15.000%

Other: Refer others to it; Source Bulletin; Disseminate to program track managers

How could the info on the website be made more relevant to your work? (n=22)

Add content	Update more	Add links	No answer
54.545%	18.182%	27.273%	13.636%

Which of the following topics would you like to see more information on? (n=22)

Water supply	31.818%
Mal. control	31.818%
Sanitation	50.000%
Mal. surveillance	27.273%
Solid waste	45.455%
Infectious control	36.364%
Hygiene	50.000%
Infectious disease surveillance	31.818%
Diarrheal prevention	40.909%
Vector control	31.818%
Handwashing	18.182%
Air pollution	13.636%
Safe excreta	45.455%
Indicators	63.636%
Impact of changes	45.455%
Health links	45.455%
Urban health	36.364%
Toxic substances	9.091%
Policy on above	40.909%

Please indicate any problems you've experienced with the site: (n=19)

Inability to connect	Links invalid	Slow to download	Downloads Interrupt	Difficult Navigate	Home page not display	None
9.091%	4.545%	13.636%	4.545%	0.000%	0.000%	72.727%

What improvements could be made to the site? (n=22)

Expand Content	More Images	More text only	Clearer Menu	Easier find Contents	None
36.364%	13.636%	13.636%	13.636%	9.091%	40.909%

Please offer any additional suggestions to improve the EHP website:

- I think EHP is great
- The site is professional and an excellent resource for the environmental health field.
- Slow to download when in Africa - the photos are nice but slow things down
- Add tropical health research; links to tropical health and health research sites
- Already excellent response time to any problems encountered
- The site is excellent. Should be kept as is.